

## **8.2 Technical Requirements**

**8.2.1 GTE shall be responsible for the engineering, provisioning, and maintenance of the underlying equipment and facilities that are used to provide Common Transport.**

**8.2.2 At a minimum, Common Transport shall meet all of the requirements set forth in the following technical references (as applicable for the transport technology being used):**

**8.2.3 ANSI T1.101-1994, American National Standard for Telecommunications - Synchronization Interface Standard Performance and Availability;**

**8.2.3.1 ANSI T1.102-1993, American National Standard for Telecommunications - Digital Hierarchy - Electrical Interfaces;**

**8.2.3.2 ANSI T1.102.01-199x, American National Standard for Telecommunications - Digital Hierarchy - VT1.5;**

**8.2.3.3 ANSI T1.105-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Basic Description including Multiplex Structure, Rates and Formats;**

**8.2.3.4 ANSI T1.105.01-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) Automatic Protection Switching;**

**8.2.3.5 ANSI T1.105.02-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Payload Mappings;**

**8.2.3.6 ANSI T1.105.03-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Jitter at Network Interfaces;**

**8.2.3.7 ANSI T1.105.03a-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET)-Jitter at Network Interfaces - DS1 Supplement;**

**8.2.3.8 ANSI T1.105.05-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Tandem Connection;**

**8.2.3.9 ANSI T1.105.06-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Physical Layer Specifications;**

**8.2.3.10 ANSI T1.105.07-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Sub STS-1 Interface Rates and Formats;**

**8.2.3.11 ANSI T1.105.09-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Network Element Timing and Synchronization;**

- 8.2.3.12 ANSI T1.106-1988, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (Single Mode);
- 8.2.3.13 ANSI T1.107-1988, American National Standard for Telecommunications - Digital Hierarchy - Formats Specifications;
- 8.2.3.14 ANSI T1.107a-1990 -American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications (DS3 Format Applications);
- 8.2.3.15 ANSI T1.107b-1991 -American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications;
- 8.2.3.16 ANSI T1.117-1991, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (SONET) (Single Mode - Short Reach);
- 8.2.3.17 ANSI T1.403-1989, Carrier to Subscriber Installation, DS1 Metallic Interface Specification;
- 8.2.3.18 ANSI T1.404-1994, Network-to-Subscriber Installation - DS3 Metallic Interface Specification;
- 8.2.3.19 ITU Recommendation G.707, Network node interface for the synchronous digital hierarchy (SDH);
- 8.2.3.20 ITU Recommendation G.704, Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 kbit/s hierarchical levels;
- 8.2.3.21 Bellcore FR-440 and TR-NWT-000499, Transport Systems Generic Requirements (TSGR): Common Requirements;
- 8.2.3.22 Bellcore GR-820-CORE, Generic Transmission Surveillance: DS1 & DS3 Performance;
- 8.2.3.23 Bellcore GR-253-CORE, Synchronous Optical Network Systems (SONET); Common Generic Criteria;
- 8.2.3.24 Bellcore TR-NWT 000507, Transmission, Section 7, Issue 5 (Bellcore, December 1993). (A module of LSSGR, FR-NWT-000064.);
- 8.2.3.25 Bellcore TR-NWT-000776, Network Interface Description for ISDN Subscriber Access;
- 8.2.3.26 Bellcore TR-INS-000342, High-Capacity Digital Special Access Service-Transmission Parameter Limits and Interface Combinations, Issue 1 February 1991;

**8.2.3.27 Bellcore ST-TEC-000052, Telecommunications Transmission Engineering Textbook, Volume 2: Facilities, Third Edition, Issue I May 1989;**

**8.2.3.28 Bellcore ST-TEC-000051, Telecommunications Transmission Engineering Textbook Volume 1: Principles, Third Edition. Issue 1 August 1987.**

**SIGNED & APPROVED: MCImetro - GTE Interconnection Agreement - California - February 13, 1997**

## **8. Common Transport**

### **8.1 Definition**

Common Transport is an interoffice transmission path between GTE Network Elements (illustrated in Figure 2) shared by carriers. Where GTE Network Elements are connected by intra-office wiring, such wiring is provided as a part of the Network Elements and is not Common Transport. GTE shall offer Common Transport as of the Effective Date of the Agreement, at DS0, DS1, DS3, STS-1 or higher transmission bit rate circuits. Common Transport consists of GTE inter-office transport facilities and is distinct and separate from local switching.

Figure 2

Figure 2 is illustrative only.

### **8.2 Technical Requirements**

**8.2.1 GTE shall be responsible for the engineering, provisioning, and maintenance of the underlying equipment and facilities that are used to provide Common Transport.**

**8.2.2 At a minimum, Common Transport shall meet all of the requirements set forth in the following technical references (as applicable for the transport technology being used). To the extent that using MCI's technical specifications for unbundled Common Transport causes GTE to incur additional costs when compared with using GTE's technical specifications, MCI shall be responsible for bearing the additional costs. Disputes regarding the existence and amount of such costs should be resolved through the dispute resolution process set forth in Section 42 of Article III:**

**8.2.2.1 ANSI T1.101-1994, American National Standard for Telecommunications - Synchronization Interface Standard Performance and Availability;**

**8.2.2.2 ANSI T1.102-1993, American National Standard for Telecommunications - Digital Hierarchy - Electrical Interfaces;**

**8.2.2.3 ANSI T1.102.01-199x, American National Standard for Telecommunications -**

**Digital Hierarchy - VT1.5;**

**8.2.2.4 ANSI T1.105-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Basic Description including Multiplex Structure, Rates and Formats;**

**8.2.2.5 ANSI T1.105.01-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) Automatic Protection Switching;**

**8.2.2.6 ANSI T1.105.02-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Payload Mappings;**

**8.2.2.7 ANSI T1.105.03-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Jitter at Network Interfaces;**

**8.2.2.8 ANSI T1.105.03a-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET)-Jitter at Network Interfaces - DS1 Supplement;**

**8.2.2.9 ANSI T1.105.05-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Tandem Connection;**

**8.2.2.10 ANSI T1.105.06-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Physical Layer Specifications;**

**8.2.2.11 ANSI T1.105.07-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Sub STS-1 Interface Rates and Formats;**

**8.2.2.12 ANSI T1.105.09-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Network Element Timing and Synchronization;**

**8.2.2.13 ANSI T1.106-1988, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (Single Mode);**

**8.2.2.14 ANSI T1.107-1988, American National Standard for Telecommunications - Digital Hierarchy - Formats Specifications;**

**8.2.2.15 ANSI T1.107a-1990 -American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications (DS3 Format Applications);**

**8.2.2.16 ANSI T1.107b-1991 -American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications;**

**8.2.2.17 ANSI T1.117-1991, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (SONET) (Single Mode - Short**

Reach);

8.2.2.18 ANSI T1.403-1989, Carrier to Subscriber Installation, DS1 Metallic Interface Specification;

8.2.2.19 ANSI T1.404-1994, Network-to-Subscriber Installation - DS3 Metallic Interface Specification;

8.2.2.20 ITU Recommendation G.707, Network node interface for the synchronous digital hierarchy (SDH);

8.2.2.21 ITU Recommendation G.704, Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 kbit/s hierarchical levels;

8.2.2.22 Bellcore FR-440 and TR-NWT-000499, Transport Systems Generic Requirements (TSGR): Common Requirements;

8.2.2.23 Bellcore GR-820-CORE, Generic Transmission Surveillance: DS1 & DS3 Performance;

8.2.2.24 Bellcore GR-253-CORE, Synchronous Optical Network Systems (SONET); Common Generic Criteria;

8.2.2.25 Bellcore TR-NWT 000507, Transmission, Section 7, Issue 5 (Bellcore, December 1993) (A module of LSSGR, FR-NWT-000064.);

8.2.2.26 Bellcore TR-NWT-000776, Network Interface Description for ISDN Subscriber Access;

8.2.2.27 Bellcore TR-INS-000342, High-Capacity Digital Special Access Service-Transmission Parameter Limits and Interface Combinations, Issue 1 February 1991;

8.2.2.28 Bellcore ST-TEC-000052, Telecommunications Transmission Engineering Textbook, Volume 2: Facilities, Third Edition, Issue 1 May 1989;

8.2.2.29 Bellcore ST-TEC-000051, Telecommunications Transmission Engineering Textbook Volume 1: Principles, Third Edition. Issue 1 August 1987.

**MCImetro - Pacific Bell Interconnection Agreement - California - February 3, 1997**

**5.Unbundled Interoffice Transmission Facilities (Transport)**

5.1 General Description and Specifications of the Unbundled Element Transport:  
PACIFIC will make available, subject to the terms and conditions specified herein, the following unbundled transport facilities:

**5.1.1 Entrance Facilities in Connection with Dedicated Transport:** PACIFIC will make available the following entrance facilities, pursuant to the charges set forth in Attachment 8, upon request of MCIIm:

**5.1.1.1 Connections between the PACIFIC's Wire Center that serves an MCIIm switch and the MCIIm switch.**

**5.1.1.2 Connections between PACIFIC's serving wire center and the point of presence of MCIIm's IXC's switch.**

**5.1.2 Dedicated Transport** is an interoffice transmission path between MCIIm designated locations. Such locations may include PACIFIC central offices or other equipment locations, MCIIm network components, other carrier network components or customer premises. Digital Cross-Connect System (DCS) functionality is available as an option which can be used in connection with Dedicated Transport. PACIFIC will make available the following dedicated connections, upon request of MCIIm:

**5.1.2.1 Connections between a PACIFIC end office or between a PACIFIC end office and a PACIFIC serving wire center;**

**5.1.2.2 Connections between a PACIFIC end office and MCIIm collocation space located in a distant PACIFIC end office;**

**5.1.2.3 Connections between PACIFIC's end office or Tandem Switch and a MCIIm designated premise.**

**5.1.3 Common Transport:** Common transport will be available between a PACIFIC end office and PACIFIC's Tandem Switch and either Party's connecting end office, Tandem Switch or designated POI.

**5.1.4 Shared Interoffice Transport:** Shared transport will only be available where MCIIm purchases LSNE. Shared transport provides call completion from a PACIFIC end office where LSNE is purchased and the terminating PACIFIC end office or POI where the call leaves PACIFIC's network.

**5.1.4.1 Use of the tandem** is included in the Shared Interoffice Transport charges set forth in Attachment 8.

## **5.2 Form of Access**

**5.2.1 Dedicated Transport:** MCIIm may order dedicated transport from the unbundled LSNE to any other point.

**5.2.2 Common Transport:** Access to common transport will be available through interconnection at the access tandem.

**5.2.3 Shared Interoffice Transport:** Access to shared transport will only be available where MCIm purchases LSNE. The Parties acknowledge that there is no physical shared transport to unbundle between PACIFIC's End Office Switches and PACIFIC's end offices and tandem switches, and MCIm's interest is in the shared use of transport between PACIFIC's switches and the associated underlying performance characteristics. PACIFIC will make available to MCIm shared transport as currently implemented within PACIFIC's interoffice network. PACIFIC will engineer, provision and maintain such shared interoffice transport facilities and equipment under existing methods and procedures.

#### **5.2.4 Use of DCS**

PACIFIC will make available the use of DCS equipment, which is a separate unbundled Network Element. When unbundled DCS is provided with unbundled transport as a combination, it shall be available on March 31, 1997. When DCS is provided without transport, it shall be available on May 30, 1997.

**5.2.5 MCIm may connect Links at PACIFIC's MDF to unbundled transport through multiplexing, e.g., D4 channel bank, DCS or Unbundled Services Cross Connect (USCC).**

#### **5.3 General Terms and Conditions**

**5.3.1** For dedicated transport, PACIFIC will provide transport unbundled from switching and other services. Such transport services will allow MCIm to send individual or multiplexed switched and dedicated services between PACIFIC's Wire Centers.

**5.3.2** Dedicated transport will be available with the following functionality or optional services:

**5.3.2.1** Protection and restoration of equipment and interfaces at parity with levels PACIFIC maintains for its own transport facilities;

**5.3.2.2** Compliance with Bellcore and industry standards to the extent implemented in PACIFIC's transport network;

**5.3.2.3** Redundant power supply or battery back-up to the extent implemented in PACIFIC's transport network;

**5.3.2.4** Provisioning and maintenance performed to the same extent such provisioning and maintenance is performed on PACIFIC's own transport network.

**5.3.3** Where deployed, PACIFIC will make available interoffice transport services capable of interfacing on copper, coaxial cable, and optical fiber facilities. Consistent with current bundled offerings, the interoffice transport services will be capable of

handling transmission rates ranging from voice grade up through Optical Carrier ("OC")-48.

**5.3.4 Transmission Levels:** Where deployed, PACIFIC will make dedicated transport available at the following speeds: DS-0, DS-1, DS-3, and commercially available Optical Carrier levels (e.g., OC-3/12/48/n).

**5.4 Implementation Schedule:** Unbundled transport will be available as of the Effective Date of this Agreement, except that unbundled transport combined with LSNE will be available simultaneously with the availability of the particular LSNE Option pursuant to the LSNE implementation schedule specified in this Attachment.

**5.5 Rates:** Rates for transport are specified in Attachment.

## **MCImetro - Sprint Interconnection Agreement - Florida: April 16, 1997**

### **Section 9. Common Transport**

#### **9.1 Definition**

Common Transport is an interoffice transmission path between Sprint Network Elements (illustrated in Figure 2) shared by carriers. Where Sprint Network Elements are connected by intra-office wiring, such wiring is provided as a part of the Network Elements and is not Common Transport. Sprint shall offer Common Transport as of the Approval Date of this Agreement, at DS0, DS1, DS3, STS-1 or higher transmission bit rate circuits. Common Transport consists of Sprint interoffice transport facilities and is distinct and separate from Local Switching.

Office A Office B

**Figure 2**

#### **9.2 Technical Requirements**

**9.2.1** Sprint shall be responsible for the engineering, provisioning, and maintenance of the underlying equipment and facilities that are used to provide Common Transport.

**9.2.2** At a minimum, Common Transport shall meet all of the requirements set forth in the following technical references (as applicable for the transport technology being used):

**9.2.2.1** ANSI T1.101-1994, American National Standard for Telecommunications - Synchronization Interface Standard Performance and Availability;

**9.2.2.2** ANSI T1.102-1993, American National Standard for Telecommunications - Digital Hierarchy - Electrical Interfaces;

**9.2.2.3 ANSI T1.102.01-199x, American National Standard for Telecommunications - Digital Hierarchy - VT1.5;**

**9.2.2.4 ANSI T1.105-1995, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Basic Description including Multiplex Structure, Rates and Formats;**

**9.2.2.5 ANSI T1.105.01-1995, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") Automatic Protection Switching;**

**9.2.2.6 ANSI T1.105.02-1995, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Payload Mappings;**

**9.2.2.7 ANSI T1.105.03-1994, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Jitter at Network Interfaces;**

**9.2.2.8 ANSI T1.105.03a-1995, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Jitter at Network Interfaces - DS1 Supplement;**

**9.2.2.9 ANSI T1.105.05-1994, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Tandem Connection;**

**9.2.2.10 ANSI T1.105.06-199x, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Physical Layer Specifications;**

**9.2.2.11 ANSI T1.105.07-199x, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Sub STS-1 Interface Rates and Formats;**

**9.2.2.12 ANSI T1.105.09-199x, American National Standard for Telecommunications - Synchronous Optical Network ("SONET") - Network Element Timing and Synchronization;**

**9.2.2.13 ANSI T1.106-1988, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (Single Mode);**

**9.2.2.14 ANSI T1.107-1988, American National Standard for Telecommunications - Digital Hierarchy - Formats Specifications;**

**9.2.2.15 ANSI T1.107a-1990 -American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications (DS3 Format Applications);**

**9.2.2.16 ANSI T1.107b-1991 - American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications;**

**9.2.2.17 ANSI T1.117-1991, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications ("SONET") (Single Mode - Short Reach);**

**9.2.2.18 ANSI T1.403-1989, Carrier to Subscriber Installation, DS1 Metallic Interface Specification;**

**9.2.2.19 ANSI T1.404-1994, Network-to-Subscriber Installation - DS3 Metallic Interface Specification;**

**9.2.2.20 ITU Recommendation G.707, Network node interface for the synchronous digital hierarchy ("SDH");**

**9.2.2.21 ITU Recommendation G.704, Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 kbit/s hierarchical levels;**

**9.2.2.22 Bellcore FR-440 and TR-NWT-000499, Transport Systems Generic Requirements ("TSGR"), Common Requirements;**

**9.2.2.23 Bellcore GR-820-CORE, Generic Transmission Surveillance, DS1 & DS3 Performance;**

**9.2.2.24 Bellcore GR-253-CORE, Synchronous Optical Network Systems ("SONET"), Common Generic Criteria;**

**9.2.2.25 Bellcore TR-NWT 000507, Transmission, Section 7, Issue 5 (Bellcore, December 1993) (A module of LSSGR, FR-NWT-000064);**

**9.2.2.26 Bellcore TR-NWT-000776, Network Interface Description for ISDN Subscriber Access;**

**9.2.2.27 Bellcore TR-INS-000342, High-Capacity Digital Special Access Service-Transmission Parameter Limits and Interface Combinations, Issue 1, February 1991;**

**9.2.2.28 Bellcore ST-TEC-000052, Telecommunications Transmission Engineering Textbook, Volume 2, Facilities, Third Edition, Issue I, May 1989; and**

**9.2.2.29 Bellcore ST-TEC-000051, Telecommunications Transmission Engineering Textbook Volume 1, Principles, Third Edition, Issue 1, August 1987.**

**MCImetro/Southwestern Bell Interconnection Agreement - Texas: April 7, 1997**

**9. Common Transport**

**This Section set forth the terms and conditions under which SWBT agrees to provide unbundled Common Transport.**

**9.1 Definition:**

**Common Transport is an interoffice transmission path between SWBT Network Elements shared by carriers.**

**9.2 Technical Requirements**

**9.2.1 SWBT shall be responsible for the engineering, provisioning, and maintenance of the underlying equipment and facilities that are used to provide Common Transport.**

**9.2.2 At a minimum, Common Transport shall meet all of the requirements set forth in the technical references (as applicable for the transport technology being used), specified in Appendix 1.**

**9.3 Provisioning Intervals**

**9.3.1 The "Installation Interval" is the time required to provision the Unbundled Common Transport Offering (i.e., the period between the application date and the install date). SWBT shall establish installation intervals in accordance with published SWBT interval guidelines and provide them to MCI for further discussion.**

**9.3.2 SWBT will establish schedules that specify installation intervals and the elements and quantities that can be provided within the published intervals.**

**9.4 Performance Standards**

**9.4.1 At a minimum, Common Transport shall meet all of the requirements set forth in the applicable Technical References in Appendix 1.**

**9.5 Rates and Charges**

**9.5.1 Rate and Charges are specified in Attachment I.**

**SIGNED & APPROVED: MCI metro - US West - Minnesota - April 16, 1997**

**8. Common Transport**

**8.1 Definition**

**Common Transport is an interoffice transmission path between USWC Network Elements (illustrated in Figure 2). This includes, but is not limited to, shared interoffice transmission paths between USWC's End Offices, between USWC's Serving Wire**

Centers, between USWC's End Offices and Serving Wire Centers, between USWC's Tandem switches and End Offices and/or Serving Wire Centers, and between such other points within USWC's network as may be designated by MCIIm. Where USWC Network Elements are connected by intra-office wiring, such wiring is provided as a part of the Network Elements and is not Common Transport.

Figure 2

## 8.2 Technical Requirements

8.2.1 Common Transport provided on DS1 or VT1.5 circuits shall, at a minimum, meet the performance, availability, jitter and delay requirements specified for Central Office-to-Central Office ("CO-to-CO") connections in the technical reference set forth in Section 8.2.4.31.

8.2.2 Common Transport provided on DS3 circuits, STS-1 circuits, and higher transmission bit rate circuits shall, at a minimum, meet the performance, availability, jitter and delay requirements specified for CO-to-CO connections in the technical reference set forth in Section 8.2.4.30.

8.2.3 USWC shall be responsible for the engineering, provisioning and maintaining the underlying equipment and facilities that are used to provide Common Transport.

8.2.4 At a minimum, Common Transport shall meet all of the requirements set forth in the following technical references (as applicable for the transport technology being used):

8.2.4.1 ANSI T1.101-1994, American National Standard for Telecommunications - Synchronization Interface Standard Performance and Availability.

8.2.4.2 ANSI T1.102-1993, American National Standard for Telecommunications - Digital Hierarchy - Electrical Interfaces.

8.2.4.3 ANSI T1.102.01-199x, American National Standard for Telecommunications - Digital Hierarchy - VT1.5.

8.2.4.4 ANSI T1.105-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Basic Description including Multiplex Structure, Rates and Formats.

8.2.4.5 ANSI T1.105.01-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Automatic Protection Switching.

8.2.4.6 ANSI T1.105.02-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Payload Mappings.

**8.2.4.7 ANSI T1.105.03-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Jitter at Network Interfaces.**

**8.2.4.8 ANSI T1.105.03a-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET): Jitter at Network Interfaces - DS1 Supplement.**

**8.2.4.9 ANSI T1.105.05-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Tandem Connection.**

**8.2.4.10 ANSI T1.105.06-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Physical Layer Specifications.**

**8.2.4.11 ANSI T1.105.07-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Sub STS-1 Interface Rates and Formats.**

**8.2.4.12 ANSI T1.105.09-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Network Element Timing and Synchronization.**

**8.2.4.13 ANSI T1.106-1988, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (Single Mode).**

**8.2.4.14 ANSI T1.107-1988, American National Standard for Telecommunications - Digital Hierarchy - Formats Specifications.**

**8.2.4.15 ANSI T1.107a-1990 - American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications (DS3 Format Applications).**

**8.2.4.16 ANSI T1.107b-1991 - American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications.**

**8.2.4.17 ANSI T1.117-1991, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (SONET) (Single Mode - Short Reach).**

**8.2.4.18 ANSI T1.403-1989, Carrier to Customer Installation, DS1 Metallic Interface Specification.**

**8.2.4.19 ANSI T1.404-1994, Network-to-Customer Installation - DS3 Metallic Interface Specification.**

**8.2.4.20 ITU Recommendation G.707, Network node interface for the synchronous digital hierarchy (SDH).**

**8.2.4.21 ITU Recommendation G.704, Synchronous frame structures used at 1544,**

**6312, 2048, 8488 and 44736 kbit/s hierarchical levels.**

**8.2.4.22 Bellcore FR-440 and TR-NWT-000499, Transport Systems Generic Requirements (TSGR): Common Requirements.**

**8.2.4.23 Bellcore GR-820-CORE, Generic Transmission Surveillance: DS1 & DS3 Performance.**

**8.2.4.24 Bellcore GR-253-CORE, Synchronous Optical Network Systems (SONET); Common Generic Criteria.**

**8.2.4.25 Bellcore TR-NWT 000507, Transmission, Section 7, Issue 5 (Bellcore, December 1993). (A module of LSSGR, FR-NWT-000064.).**

**8.2.4.26 Bellcore TR-NWT-000776, Network Interface Description for ISDN Customer Access.**

**8.2.4.27 Bellcore TR-INS-000342, High-Capacity Digital Special Access Service-Transmission Parameter Limits and Interface Combinations, Issue 1 February 1991.**

**8.2.4.28 Bellcore ST-TEC 000052, Telecommunications Transmission Engineering Textbook, Volume 2: Facilities, Third Edition, Issue I May 1989.**

**8.2.4.29 Bellcore ST-TEC-000051, Telecommunications Transmission Engineering Textbook Volume 1: Principles, Third Edition. Issue 1 August 1987.**

**8.2.4.30 AT&T Technical Reference 54014, ACCUNET T45 Service Description and Interface Specification, May 1992.**

**8.2.4.31 AT&T Technical Reference TR 62411 ACCUNET T1.5 Service Description And Interface Specification, December 1990 and all addenda.**

**SIGNED & APPROVED: MCI metro - US West - Iowa - December 24, 1996**

## **8. Common Transport**

**8.1 Definition:** Common Transport is an interoffice transmission path between the ILEC Network Elements (illustrated in Figure 2). This includes, but is not limited to, shared interoffice transmission paths between the ILEC's End Offices, between the ILEC's Serving Wire Centers, between the ILEC's End Offices and Serving Wire Centers, between the ILEC's Tandem switches and End Offices and/or Serving Wire Centers, and between such other points within the ILEC's network, as may be designated by the CLEC. Where the ILEC Network Elements are connected by intra-office wiring, such wiring is provided as a part of the Network Elements and is not Common Transport.

**Figure 2**

## **8.2 Technical Requirements**

**8.2.1 Common Transport provided on DS1 or VT1.5 circuits, shall, at a minimum, meet the performance, availability, jitter, and delay requirements specified for Central Office to Central Office "CO to CO" connections in the technical reference set forth in Section 8.2.4.31.**

**8.2.2 Common Transport provided on DS3 circuits, STS-1 circuits, and higher transmission bit rate circuits, Common Transport shall, at a minimum, meet the performance, availability, jitter, and delay requirements specified for Central Office to Central Office "CO to CO" connections in the technical reference set forth in Section 8.2.4.30.**

**8.2.3 The ILEC shall be responsible for the engineering, provisioning, and maintenance of the underlying equipment and facilities that are used to provide Common Transport.**

**8.2.4 At a minimum, Common Transport shall meet all of the requirements set forth in the following technical references (as applicable for the transport technology being used):**

**8.2.4.1 ANSI T1.101-1994, American National Standard for Telecommunications - Synchronization Interface Standard Performance and Availability;**

**8.2.4.2 ANSI T1.102-1993, American National Standard for Telecommunications - Digital Hierarchy - Electrical Interfaces;**

**8.2.4.3 ANSI T1.102.01-199x, American National Standard for Telecommunications - Digital Hierarchy - VT1.5;**

**8.2.4.4 ANSI T1.105-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Basic Description including Multiplex Structure, Rates and Formats;**

**8.2.4.5 ANSI T1.105.01-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Automatic Protection Switching;**

**8.2.4.6 ANSI T1.105.02-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Payload Mappings;**

**8.2.4.7 ANSI T1.105.03-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Jitter at Network Interfaces;**

**8.2.4.8 ANSI T1.105.03a-1995, American National Standard for Telecommunications - Synchronous Optical Network (SONET): Jitter at Network Interfaces - DS1 Supplement;**

**8.2.4.9 ANSI T1.105.05-1994, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Tandem Connection;**

**8.2.4.10 ANSI T1.105.06-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Physical Layer Specifications;**

**8.2.4.11 ANSI T1.105.07-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Sub STS-1 Interface Rates and Formats;**

**8.2.4.12 ANSI T1.105.09-199x, American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Network Element Timing and Synchronization;**

**8.2.4.13 ANSI T1.106-1988, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (Single Mode);**

**8.2.4.14 ANSI T1.107-1988, American National Standard for Telecommunications - Digital Hierarchy - Formats Specifications;**

**8.2.4.15 ANSI T1.107a-1990 - American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications (DS3 Format Applications);**

**8.2.4.16 ANSI T1.107b-1991 - American National Standard for Telecommunications - Digital Hierarchy - Supplement to Formats Specifications;**

**8.2.4.17 ANSI T1.117-1991, American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Specifications (SONET) (Single Mode - Short Reach);**

**8.2.4.18 ANSI T1.403-1989, Carrier to Customer Installation, DS1 Metallic Interface Specification;**

**8.2.4.19 ANSI T1.404-1994, Network-to-Customer Installation - DS3 Metallic Interface Specification;**

**8.2.4.20 ITU Recommendation G.707, Network node interface for the synchronous digital hierarchy (SDH);**

**8.2.4.21 ITU Recommendation G.704, Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 kbit/s hierarchical levels;**

**8.2.4.22 Bellcore FR-440 and TR-NWT-000499, Transport Systems Generic Requirements (TSGR): Common Requirements;**

**8.2.4.23 Bellcore GR-820-CORE, Generic Transmission Surveillance: DS1 & DS3 Performance;**

**8.2.4.24 Bellcore GR-253-CORE, Synchronous Optical Network Systems (SONET); Common Generic Criteria;**

**8.2.4.25 Bellcore TR-NWT 000507, Transmission, Section 7, Issue 5 (Bellcore, December 1993). (A module of LSSGR, FR-NWT-000064.);**

**8.2.4.26 Bellcore TR-NWT-000776, Network Interface Description for ISDN Customer Access;**

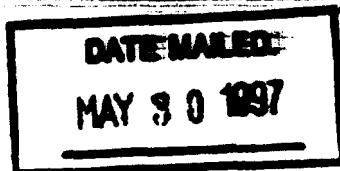
**8.2.4.27 Bellcore TR-INS-000342, High-Capacity Digital Special Access Service-Transmission Parameter Limits and Interface Combinations, Issue 1 February 1991;**

**8.2.4.28 Bellcore ST-TEC 000052, Telecommunications Transmission Engineering Textbook, Volume 2: Facilities, Third Edition, Issue I May 1989;**

**8.2.4.29 Bellcore ST-TEC-000051, Telecommunications Transmission Engineering Textbook Volume 1: Principles, Third Edition. Issue 1 August 1987;**

**8.2.4.30 AT&T Technical Reference 54014, ACCUNET T45 Service Description and Interface Specification, May 1992; and**

**8.2.4.31 AT&T Technical Reference TR 62411 ACCUNET T1.5 Service Description And Interface Specification, December 1990 and all addenda.**



BEFORE THE  
PUBLIC SERVICE COMMISSION OF WISCONSIN

Matters Relating to Satisfaction of  
Conditions for Offering InterLATA Service  
(Wisconsin Bell, Inc. d/b/a Ameritech  
Wisconsin)

6720-TI-120

FINDINGS OF FACT, CONCLUSIONS OF LAW,  
AND SECOND ORDER

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dark fiber is used in the provision of telecommunications service and therefore is a network element and should be unbundled and made available.

In its March 3, 1997, Statement, Ameritech did not offer dark fiber. Ameritech revised its filing on March 26, 1997, to offer dark fiber and provided a price list for such dark fiber. AT&T and MCI allege the offering is discriminatory and raise concerns regarding the limitations Ameritech places on when it will offer dark fiber and whether or not it will continue to offer dark fiber. Further concerns were expressed by the parties regarding the definition of critical terms and the prices at which dark fiber is offered. These allegations and concerns taken together are convincing that Ameritech's offering of dark fiber is inadequate to qualify as the offering of an unbundled element. While the tariff will remain in place as an offering, a future filing of the Statement should bolster the dependability and predictability of the offering. Further, Ameritech's pricing of dark fiber has not been adequately reviewed thus far in this proceeding, so it will need to be addressed in a future filing.

## **2. Shared/common transport**

This Commission is in the position of needing to determine if Ameritech's unbundled transport offering is in compliance with the Act and FCC rules while the FCC is in the process of reconsidering its rules in this area. Ameritech requested that this Commission approve its Statement, but also defer any determination on the shared interoffice transport issue until the FCC resolves this matter and simply require that Ameritech conform to the FCC's final resolution of this issue when issued. This is not a plausible alternative. This Commission must determine whether or not Ameritech's Statement is in compliance with §§ 251 and 252(d) of the

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Act and FCC rules and the offering must be available before it can approve a Statement.

Therefore, this Commission cannot approve a Statement based on Ameritech's intent to comply

with potential future FCC rules. If the Commission is to wait until the FCC reconsideration

complete for guidance regarding shared transport, then approval of the Statement must wait until that reconsideration is complete.

The Commission, however, provides Ameritech two alternatives to obtain approval of its Statement. Below are this Commission's findings that Ameritech's Statement as filed does not comply with the Act and the FCC rules as currently in effect. The first alternative we provide is that if Ameritech decides to file another Statement before the FCC completes its reconsideration, then the Statement must comply with the unbundled transport requirements given in this order. The second alternative is that Ameritech can wait and not file another Statement until after the FCC has completed its reconsideration. If the FCC alters its rules on unbundled transport, then Ameritech can obtain approval for this offering by complying with the FCC rules.

Commissioner Mettner dissented with regard to providing the second option.

This Commission determines that Ameritech's offering of unbundled transport does not provide all transport facilities on an unbundled basis. Only DS-1 facilities are offered on an unbundled basis. The requirement to offer unbundled network elements in § 251(c)(3) does not allow for the exclusion of any facilities. In addition, the Commission finds Ameritech's proposal only offers dedicated unbundled transport and does not offer shared unbundled transport as required by 47 CFR § 51.319(d). To correct these deficiencies Ameritech must offer all transport facilities on both a shared basis and a dedicated basis. Shared transport must use

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Ameritech's routing tables and not require engineering or dedicated ports. Separate customer routing and engineering can only be required for dedicated or fractions of dedicated facilities.

Ameritech's March 3, 1997, Statement required that dedicated trunk ports sized by DS-1, DS-3, OC-3 to OC-48 be purchased and combined with dedicated transport sold in mileage increments of the same size denominations and tandem transport termination of the same size denominations to provide unbundled transport between Ameritech's central office switches and Ameritech's tandem switches (consisting of a path and terminations on each end; local office and tandem). Ameritech's March 3, 1997, filing also included a "shared company transport" in which the mileage rate elements could be purchased in denominations of 1/24 of a DS-1, but the termination facilities are offered only in the above stated full denominations or, when on a minute-of-use basis, based on Ameritech's existing access rates. Ameritech later revised the local office trunk ports and the tandem transport termination to be offered in 1/24 of a DS-1 size denomination as well. Only DS-1 facilities are offered on a fractional basis. In addition, customized routing must be purchased to route traffic over the fractional or full-sized facilities.

Ameritech offers only the least efficient facilities (DS-1) on a fractional or per-channel basis. More efficient facilities like DS-3 or OC-Xs are not sold on a fractional basis. For other than the DS-1 facilities, Ameritech only offers the same size denominations of transport that a competing provider would need to buy if it were seeking to compete using its own facilities instead of unbundled elements. (The terms DS-1, DS-3, and various OC-Xs refer to sizes of complete facilities.) In effect, competing carriers are expected to build their own networks; only their networks would be built from buying facilities-sized unbundled elements instead of just buying facilities. It is not reasonable to define unbundled transport in a manner that provides no

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difference from purchasing facilities. Competing carriers should be able to specify any facilities such as DS-3 or OC-X's service in fractions.

The Act clearly spells out three means of competition: (1) resale, (2) unbundled network elements and (3) facilities-based competition. The Act clearly provides two ways to use the incumbent's networks: (1) unbundled network elements based on cost and (2) resale based on a discount off of the retail price. Providing unbundled network elements in addition to resold whole services serves a number of important purposes. When providers just want to match Ameritech's offering, resale is available.

Unbundled network elements provide a competitive restraint on the incumbents' retail rates. With unbundled network elements priced based on cost, if Ameritech raises its retail rates excessively, competitors can choose to purchase unbundled elements and charge lower rates. In rural areas where facilities-based competition will likely be inefficient, the availability of unbundled network elements based upon cost may serve as an important restraint on retail rate increases.

Providers that do not have the volume of traffic to justify the purchase of their own facilities need Ameritech's unbundled network elements in order to compete. To avoid inefficient overbuilding of facilities, competitors need to be able to purchase unbundled network elements in quantities that will be reasonable given their volume of traffic.

In addition, unbundled network elements can also be used to provide multiple retail services in different proportions than Ameritech provides retail services. The availability of unbundled network elements encourages more efficient use of facilities or offering new services with existing facilities.

Accordingly, it is important that all three means of competition are available. It is unreasonable for Ameritech to define network elements in a way that provides only two means of competing with Ameritech, resale and facilities-based competition and to define unbundling in a way that provides no meaningful difference from facilities-based competition. The Commission finds that offering unbundled transport in the same sizes as full facilities does not meet the requirement to provide unbundled transport. The Commission requires that all transport facilities, DS-1, DS-3 and various OC-Xs must be offered on both a shared and dedicated basis. A reasonable size dedicated offering would allow a logical progression to more concentrated facilities without overbuilding. For example DS-3 facilities should be sold in at least DS-1 size fractions.

Ameritech's minute-of-use offering does not provide unbundled transport either. Ameritech's minute of use offering is an access retail service. The pricing of access does not comply with the pricing rules in § 252(d) of the Act and, therefore, cannot fulfill the requirement to provide unbundled transport.

Ameritech's offering of fractions of DS-1 does not provide shared or common transport. The FCC Interconnection Order (CC Docket No. 96-98) describes unbundled transport on a customer-line basis at ¶¶412, 414, and 423 and on a minute-of-use basis at ¶¶258 and 428. DS-1 transport consists of 24 channels. A single transport channel can serve many voice lines. This is because all voice lines are not in simultaneous use for a full hour during the system busy hour. Telecommunications systems are designed to have many voice lines served by a single transport channel based on expected calling patterns. If too many voice lines feed into a single transport channel, such that a busy hour call cannot be handled, the end user receives a fast busy signal for

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such a blocked call. The determination of the number of voice lines that can be served by each channel is a product of the engineering of Ameritech's transport network. The FCC's per-minute customer-line and minute-of-use language reflects the intent to provide competitors the ability to share Ameritech's facilities as they have been designed and engineered.

This is further reflected in the FCC's use of the term functionality. The FCC identifies how it views the unbundling of the transport functionality in ¶258, which says, "Carriers seeking other elements, especially shared facilities such as common transport, are essentially purchasing access to a functionality of the incumbent's facilities on a minute-by-minute basis."

Paragraph 444 states that the FCC does not require physical partitioning of a particular piece of transport equipment, but instead permits competitors to use the functionality in the same manner that incumbent LECs now permit IXCs to use such functionality, which is on a minute-of-use basis. The concept of functionality is codified in the following rule: "An incumbent LEC shall provide a requesting telecommunications carrier access to the facility or functionality of a requested network element separate from access to the facility or functionality of other network elements, for a separate charge." (47 CFR § 51.307(d)) In the context of the narrative of the Interconnection Order, it is reasonable to interpret this as meaning that access to facilities is provided where facilities are dedicated and access to functionalities is provided where facilities are shared among more than one end user.

Ameritech's current "Shared Company Transport" offering requires providers to couple the transport with dedicated ports on each end. Ameritech also requires that purchasers of "Shared Company Transport" to purchase customize routing to specify the route traffic will

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follow. The use of dedicated ports customized routing makes this an offering of dedicated transport and not shared transport.

Common or shared transport does not have this type of routing restrictions. Similar to how access rates are structured, common transport can be used to transport calls at times when a provider's dedicated facilities are at capacity. In such cases, the calls carried over common access transport are routed according to Ameritech routing tables. The existence of dedicated ports and customized routing are the means by which transport is made dedicated. Shared or common transport flows through Ameritech ports and Ameritech's routing tables are used to direct the traffic. Shared or common transport should not be route specific.

The FCC rules require that both dedicated transport as well as shared transport (herein also called common transport) be offered per § 51.319(d)(1). Accordingly, the Commission finds that Ameritech's unbundled transport offering is deficient because it does not offer shared transport. Ameritech must offer shared transport with the meaning of shared transport being that it uses Ameritech's routing tables and it does not require separate engineering or dedicated ports.

Ameritech included a provision in its fractional transport option that competitors cannot have more than 23 channels worth of fractional transport over a particular route. Ameritech is imposing terms such that competitors could not rely solely on common or shared transport when the provider has enough traffic to justify dedicated transport. While this is a reasonable concern, Ameritech's proposed language would prevent a competitors' customers from completing calls when its network exceeds its normal capacity. This restriction prevents competitors from using common transport to handle true overflow situations. Such an outcome is not reasonable. Instead, Ameritech should develop an additional charge which applies when the competitor